

1001504706

WS

Compounds

WILKINSON SWORD

Cooling Compounds

Menthol Related

EXCLUSIVE EVALUATION

WS-14

2X Cooling-Menthol

Not Menthol Replacement.

Does Not Deliver From Filter.

Low Delivery Enhancement.

Active Carbon - Cooling

1001504707

U + 8515

B+H Menthol Control

vs B+H with WS-14 (No Menthol)

161 100mm Non Menthol Smoke

Control

OFF TASTE

HARSH

BITTER

WS

100mm 100mm

BETTER AFTER TASTE

100mm 100mm

MORE ACCEPTABLE

HIGHER TOLERANCE

1001504708

5532

Control Menth Menth

MENT w US-14 (No Menth)

151 Regular Filter Smokers

78 Menth Filter Smokers

Regular Smokers

Menth Smokers

Control

Harsh

No DIFFERENCE

Bitter

No PREFERENCE

Cooling

US

More Tobacco

PREFERRED

More Acceptable

Higher Purchase Probability

1001504709

U.S.

V 5524

Merit  
Menthol

Active Carbon  
U.S.

9.7	TAR	10.4
0.7	Nicotine	0.7
8.3	Puffs	7.9
30	Dilution	26

Menthol  
mg

2.4	Filter	—
0.5	Filter	—
0.26	Smoke	—

U.S.

mg

—	Filter	1.7
—	Filter	—
—	Smoke	0.19

38

Smoke Index (L)

6

1001504710

1001504711

11	Reg Filter Smokers
12	Menthol Smokers
13	
14	
15	Regular Smoker
16	Menthol Smokers
17	
18	No D. PREFERENCE
19	No PREFERENCE
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	
31	
32	
33	
34	
35	
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38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	
50	

V4610

V4611

For Control M&M Regular  
M&M with WS.

209 Menthol Smokers

262 Regular Smokers

Regular Smokers

Menthol Smokers

Control

Control

MORE TASTE

OFF TASTE

MORE TOBACCO

HARSHER

BETTER AFTER TASTE

BITTER

PREFERRED

WS.

WS

OFF TASTE

MORE TASTE

SPICY

SPICY

SWEETER

SWEETER

COOLER

BETTER AFTER TASTE

COOLER

PREFERRED

1001504712

8-500



Cigarette ?  
Field (1)  
Pick-Up.

One 100 mg

2

1001504714

tipping paper availability at the time of introduction.

V. WS FLAVOR COMPOUNDS

A better market test is needed to prove that there is a market segment for the WS product. Some consideration should be given to trying the WS compound in the Beta-type product or

P.07-2

Marlboro 85

Merit 85

Winston 85

K&L 85

Merit Menthol

Kool 85

Salem 85

1001504715

# PU DATES OF MANUFACTURE

	MARL	MERT		
	Dry - Celo Storage Storage	Dry Celo	Whiston	KGL
Apr				
MAY				
JUNE				
July				
Aug				
Sept				
Oct	4			
Nov	10			
Dec	1	25		
Jan		7		
Feb	10	1	1	
Mar	1	2		1
Apr	1	1	1	3
May	4	1	2	
June	12	8	25	10
July	7	9	26	23
Aug				18
	25	25	23 23	54 55

1001504716

(3) UETA

No sheet → low NH<sub>3</sub> Check analyses

March 1 instant Feb 1 to manufacture (test not ~ p% of analysis)

Keep Ki-alk blend, but add my 12.12.2017?

Test 4 (2.1.17, 1.1.17)

PU-4

Oven Volatiles

March

Merit

Winston

KGL

0/6

12.2

11.8

11.5

11.6

Dry Cigarettes in Phoenix

Spotting

Seals

Fixbook

1/2

1001504717

ANN K<sup>+</sup> to show 1

P.O. 5

# MENTHOL BRANDS

DATE OF MANUFACTURE

MURKIN

DEY COLB KOOL SALEM

116 APR 1

MAY

JUNE

JULY

AUG

SEPT

OCT

NOV

DEC

517 JAN

FEB

MAR

APR

MAY

JUNE

JULY

AUG

33

21

55

55

1001504718

PU-65

# Mentha L Products

## Oven Volatiles

G'

	Mexit	Kool	Sakem
%	11.6	11.5	11.6

## Spattine

## Seals

1001504719

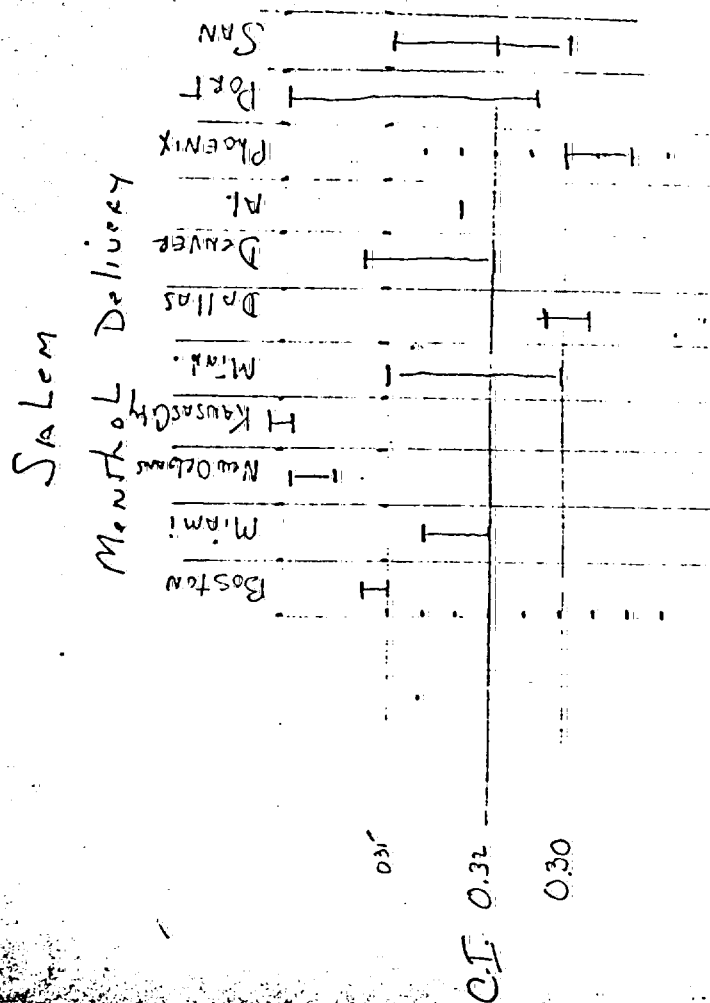
1001504720

Kool  
Mental Delivery  
Boston  
Miami  
New Orleans  
Kauas City  
Minneapolis  
Dallas  
Denver  
Albuquerque  
Phoenix  
Portland  
San Francisco

C.I.  
10-1-50  
10-1-50

10-1-50

PV-8



1001504721



PU-9

Merit Mentel

Delivered

Boston  
Miami  
N.O.  
Kansas  
Min.  
Dallas  
Denver  
AL  
Phoenix  
Felt  
SANT

820  
10

1001504722

~~PU-8~~  
PU-10

F Filler Filter - Smoke

Boston	JAN	3.18	0.21
	Jul 77	3.29	0.21
Miami	JUN	2.84	0.23
	Oct.	2.69	0.20
New Orleans	Dec	3.23	0.21
	Dec	3.19	0.25
Kansas City	Jun 77	3.11	0.29
	Dec	3.10	0.25
MinN	May 77	2.75	0.24
	Jun 77	3.01	0.22
Dallas	Apr 76	3.37	0.24
	July 77	3.10	0.18
DENVER	Dec	3.03	0.24
	MAR	3.49	0.26
ALBUQUERQUE	Dec	3.34	0.25
	July 77	3.24	0.22

1001504723

PULL

Phoccy

Filler Filler

Smk

Apr 77

3.08

0.20

Mar

4.01

0.29

PortLug

May 77

3.18

0.21

June 77

3.14

0.24

SANFRAN

Dec

3.27

0.24

Jun 77

3.01

0.24

CI

3.30

0.27

1001504724

PU-12

C.I. 1.1 Samples

MORIT Monthly

	Filter Filter	Smoker
MAR	3.5	0.32
APR	3.8	0.37
MAY	3.6	0.30
JUNE	3.8	0.32
JULY	3.1	0.26
AUG	2.9	0.21
SEPT	3.1	0.29

1001504725

PREFERRED

ME-1

Maelboau

lights

85<sup>1</sup>/<sub>2</sub>

1001504726

1001504727

ML-2

Marlboro Lights 85

Length 84.4

CIRCUMFERENCE 85.1

Filter

Inner 10 CA

Outer 15 CA Plastic

Tipings 31

Dilution 22

EVALUATE

Filter Change

Filter Change

1001504728

1ML-3

Filter

Test Master

Firm CA

Flavor

Nealboro lights

Flavor 2

Flavor B

ML-4

POL 4038

85 MARL 31mm CORK

VS

85 MARL Lights 31mm CORK

POL 4039

85 mm MARL 31mm CORK

VS

85 Lights 31mm CORK FLAVOR "B"

POL 4040

85 mm MARL 31mm CORK

VS

85 Lights 31mm CORK FLAVOR "Z"

300 MARL Smokers

200 Cross Section 85mm FULL FLAVOR

1001504729



POL 4041

85 mm MARL Lights

vs

85 mm Lights FLAVOR B

POL 4042

85 mm MARL Lights

vs

85 mm Lights FLAVOR Z

HTI 1234 | 1235

85 mm Lights FLAVOR Z

85 mm Lights FLAVOR B

200 Lights Smoke

200 Lights Red Smoke

200 other w/ Menthol 85'2

1001504730

V-424628

75 mm Lights

85 mm 1st FLAVOR CHANGE

200 MARL Lights Smokers

200 Closs Section 85'2"

1601504731

1001504732

Cigarette  
Field 1  
Pick-Up

P.U. 2  
MARLBORO 85

MERIT 85

WINSTON 85

K&L 85

MERIT MENTHOL

KOOL 85

SALOM 85

1001504733

0.45  
C.I.  
0.42  
Menthol  
0.40

P.U. = 3

# DATES OF MANUFACTURE

	MABL		MCKIT			
	DET Chicago	Oslo Stockholm	Long	CL	Whistler	KGL
1922	Apr					
	MAY					
	JUNE					
	July					
	Aug					
	Sept					
	Oct	4				
	Nov	10				
	Dec	1		25		
1923	JAN			7		
	Feb	10	1	1		
	Mar	1		2		1
	Apr	1	1		1	3
	May	4	1		2	
	June	12	8		25	10
	July	7	9		26	23
	Aug					18
	25	25	23	23	54	55

1001504734

PL-8

PU-4

Oven Volatiles

Marl

Merit

Winston

K&L

%

12.2

11.8

11.5

11.6

Dry Cigarettes in Phoenix

Spitting

Seals

Leak

1001504735

PU-9

P.U. 5

# MENTHOL BRANDS

DATE OF MANUFACTURE

MENT

DAY COLD Kool Salem

16 Apr	1			
May				
June		1		
July				
Aug				
Sept				
Oct	1	1		
Nov		2	1	
Dec		14		
17 JAN		1		
Feb				
Mar	1	2	1	
Apr	6		2	2
May	3		6	6
June	18		34	33
July	3		10	14
Aug			1	
	33	21	55	55

1001504736

ALBUQUERQUE Dec 3.34 0.25  
July 77 3.24 0.22

PU-6

### Menthyl Products

#### OVEN Volatiles

G'

	Mxit	Koal	Salem
%	11.6	11.5	11.6

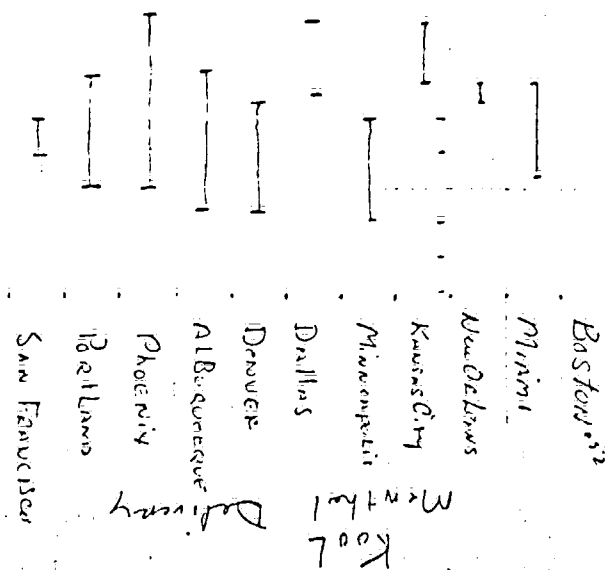
Spotting

Seals

1001504737

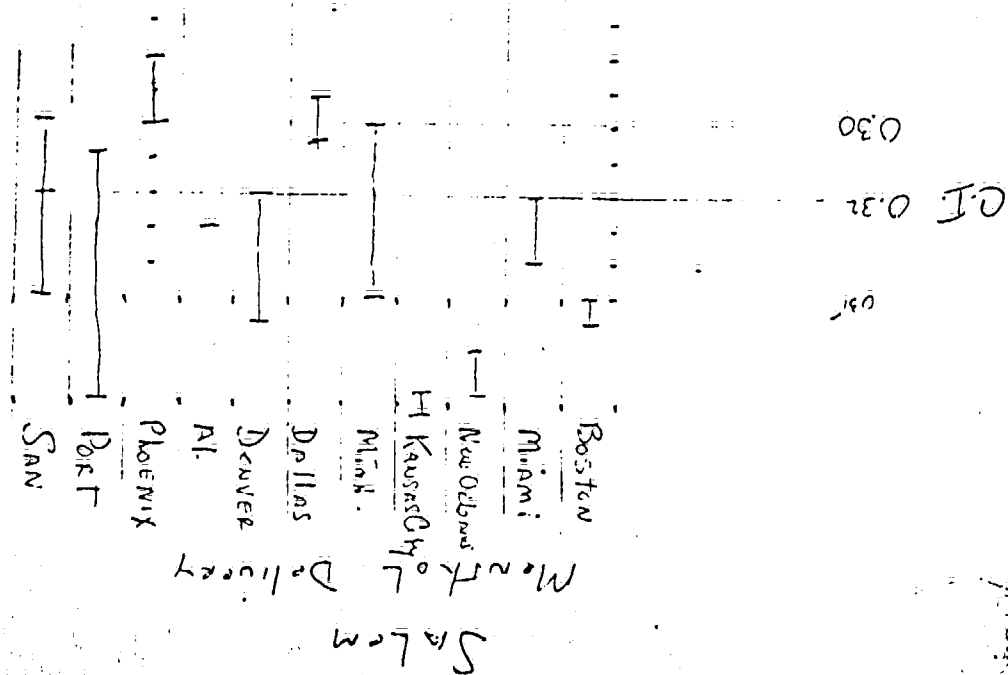


1001504738

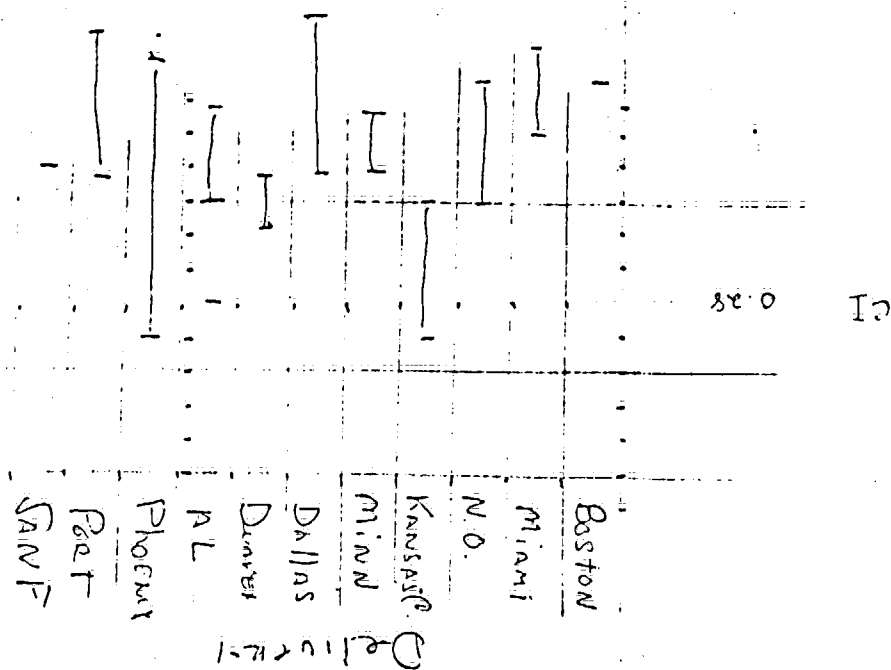


C.I.  
Mx-Hol  
0.41  
0.40

1001504739



1001504740



Moritt M-24-kel

Deliveries

~~PU-10~~

PU-10

		F Filler/Filter	Smoke
Boston	Jan	3.18	0.21
	Jul 77	3.29	0.21
Miami	Jun	2.84	0.23
	Oct	2.69	0.20
New Orleans	Dec	3.23	0.21
	Dec	3.19	0.25
Kansas City	Jun 77	3.11	0.29
	Dec	3.10	0.25
Minneapolis	May 77	2.75	0.24
	June 77	3.07	0.22
Dallas	Apr 76	3.37	0.24
	July 77	3.10	0.18
Denver	Dec	3.03	0.24
	Mar	3.49	0.26
St. Louis	Dec	3.34	0.25
	July 77	3.24	0.22

1001504741

PULL

Phoenix      Filter Filter      Smoke

(

Apr. 77

3.08

0.20

Mar

4.01

0.29

Portland

May 77

3.18

0.21

June 77

3.14

0.24

SAN FRAN

Dec

3.27

0.24

JUN 77

3.01

0.24

C.I

3.30

0.27

1001504742

Gas MRL Samples  
200 Cross Section Exam Full House

PU-12

C.I. 1 Samples

Moist Menthel

	Filter Filter	Smokes
MAR	3.5	0.32
APR	3.8	0.37
MAY	3.6	0.30
JUNE	3.8	0.32
JULY	3.1	0.26
AUG	2.9	0.21
SEPT	3.1	0.29

1001504743

1001504744

200 lights  
in 1000 lbs Sample  
for other use marked 85<sup>th</sup>

ME-1

Maellbom

lights

85<sup>th</sup>

Marlboro Lights 85

Length 84.4

CIRCUMFERENCE 25.1

Filter

INNER 10 CA "

OUTER 15 CA PLASTIC

Tipping 31

Dilution 22

EVALUATE

FILTER CHANGE

FLAVOR CHANGE

1001504745



1001504746

MC-3

Filter

Test Macer

Firm CA.

Flavor

MacLbura lights

FLAVOR 2

FLAVOR B

ML-4

POL 4038

VS

85 MARL 31mm CORK

VS

85 MARL Lights 31mm CORK

POL 4039

85 mm MARL 31mm CORK

VS

85 Lights 31mm CORK FLAVOR "B"

POL 4040

85 mm MARL 31mm CORK

VS

85 Lights 31mm CORK FLAVOR "2"

300 MARL Smokers

250 Cross Section 85mm FULL FLAVOR

1001504747

POL 4041

85 mm MARL Lights

vs

85 mm Lights FLAVOR B

POL 4042

85 mm MARL Lights

vs

85 mm Lights FLAVOR Z

H75 1234 | 1235

85 mm Lights FLAVOR Z

85 mm Lights FLAVOR B

200 Lights Smoker

100 Lights Red Smoker

200 other new MARL SS 12

1001504748

V-444628

25 mm lights

85 mm 1st Floor (P)  
Chimney

200 Mph lights Smokes

200 Class Section 85'a.

1001504749

US  
COMPUTERS.

1001504750

WILKINSON SWORD

Costing Impound

Menthol Related

Exclusive Location

WS-14

2X Costing Menthol

Not Menthol Replacement

Does Not Deliver From Filter

Low Delivery Enhancement

Active Carbon - Costing

1001504751

U#8515

WS-3

B+H Methyl Control

V: B+H with WS-14 (Hb Methyl)

161 100mg Hb Methyl Smoker

Control

OFF TASTE

5445000

Bitter

WS

100mg Hb Methyl

5445000

Bitter

100mg Hb Methyl

5445000

0.30

C.I 0.32

0.30

US-4

V5532

Control Month Month L

Merit w US-4 (in Month)

151 Regular Filter Smokers

78 Month Filter Smokers

Regular Smokers Month Smokers

Control

Hasbain No Difference

Bitter No Preference

Cooler

US

More Tobacco

Pepper Red

Free Kryptonite

Highly Pleasure Finding

1001504753



13

US-5

V 5524

MORIT  
Menthol

Active Carbon  
US

9.7	TAR	10.4
0.7	Nicotine	0.7
8.3	Puffs	7.9
30	Dilution	26

Menthol mg

2.4	Filter	—
0.5	Filter	—
0.26	Smoke	—

US mg

—	Filter	1.7
—	Filter	—
—	Smoke	0.19

38 Smoke Index (L) Co

1001504754

REGULAR USE  
↓ 1.77

0.25  
0.22

WS-C

121 Reg Filter Smokers

118 Menthol Smokers

Regular Smoker

Menthol Smokers

No Dislike

No Preferences

1001504755

V.4610

V.4611

Control Moist Regular  
Moist with WS

1208 Menthol Smokers

262 Regular Smokers

Regular Smokers

Menthol Smokers

Control

Control

MORE TASTE

OFFTASTE

MORE TOBACCO

HARSHER

BETTER AFTER TASTE

BITTER

PREFERRED

WS.

WS

OFF TASTE

MORE TASTE

Spicy

Spicy

Sweeter

Sweeter

Cooler

BETTER AFTER TASTE

Cooler

PREFERRED

1001504756

Furthae Evaluations

US-8

1001504757

AGENDA

RICHMOND MEETING

OCTOBER 11, 1977

MICROBIAL RESOLUTIONS OF DL-NICOTINE

MARLBORO LIGHTS 100's

MARLBORO LIGHTS 85's

MERIT MENTHOL

PROJECT BETA

CIGARETTE FIELD PICK UP

W. S. FLAVOR COMPOUNDS

TIPPING PERFORATION — STATUS REPORT

CO<sub>2</sub> LASER DEMONSTRATION

NITRATE REDUCTION — STATUS REPORT

UTILIZATION OF NEW INSTRUMENTATION

DIGITAL DILUTION DEVICE

LASER CIRCUMFERENCE MEASURING DEVICE

IMAGE ANALYZER

1001504758

1001504759

FLAURA CHARGE

PROJECT

BETA

# V. P. TESTING

CONTROL

MERIT

4629

4630

4631

4632

BLEND

MERIT

Hi-ETA

B

B

Hi-ETA

TAR

9.6

7.0

6.3

6.1

7.0

NICOTINE

.62

.64

.48

.48

.62

P.C

7.8

7.6

7.8

8.3

7.1

RTD

5.3

4.4

4.6

4.5

4.1

DILUTION

23

42

43

46

43

1001504760

300 MARL Snokers

230 Cross Section 85mm Full Truck

V.P. RESULTS

MERIT Vs.

4629 - H. ETA

C

E

LDS

RFS

4632 H. ETA

No AC

C

E

LDS

RFS

1001504761





HTI      TESTS

	CONTROL	5038	5042	5046
	MCPIT	B	B-N.AC	H-ETA Rx
TAR	8.3	5.6	5.5	6.4
NICOTINE	.58	.46	.44	.63
P.C.	7.4	7.9	8.0	7.4
R.T.D	5.3	4.8	4.7	4.5
DILUTION	27	42	46	43

SHIPPED TO HTI - 0.71 ?

RESULTS - DEC. 1

1001504763

# HTI Tests

	5043	5044	5045	5047
Control				
MERIT	B. Sp	H. ETA	H. ETA	H. ETA
		N. AC		L. F.

1A2

VIOLINE

PC

RIO

Dilution

SHIP TO HTI

DET

RESULTS

DEC

1001504764

1001504765

BETA 100

TAR

NITROGEN

P.C.

R.T.O

DILUTION

FILTER

31mm

TIPPING

36

PLANS

BETA MENTHOL 85

TAR

NICOTINE

DC

RTO

DILUTION

MENTHOL

PLAIDS

1001504766

1001504767

MARLBORO

LIGHTS

100

# PROTOTYPES

	MF	ML	ML	ML
	100	100	100 - F2	100 - FB
TAR	15.9	11.8	11.5	11.6
NICOTINE	.93	.78	.74	.76
P.C.	9.1	9.5	9.4	9.7
R.T.D.	5.3	5.3	5.0	5.4
DILUTION	--	23	26	25

INTERNAL SUBJECTIVE

ACCEPTABLE FOR TESTING

1001504768

COOLER

BETTER AFTER TASTE

COOLER

PREFERRED

1001504769



1001504770

SCHEDULED TESTING

TEST MARKET CIGARETTE

CONTROL  
ML - 85

TEST  
ML - 85

TAR 11.8

11.5

NICOTINE .85

.72

P.C. 7.7

7.6

RTD 3.8

4.7

DILUTION 22

15

FILTER PL/CA

CA 3.9/48000

INTERNAL SUBJECTIVE

ACCEPTABLE FOR TEST MARKET

TEST MARKET

OCT 3

GREEN BAY & LITTLE ROCK

1001504771

1001504772

IMAGE ANALYZER

MERIT

MENTHOL

## BACK GROUND

- MENTHOL MARKET

85 mm	27 %
-------	------

100 mm	30 %
--------	------

- MERIT MARKET SHARE

85 mm	22.9 %
-------	--------

100 mm	26.9 %
--------	--------

- MERIT BLIND TESTING

VP + HTI

- ? IMPROVED MERIT MENTHOL ?

1001504773

Significance?

MERIT MENTHOL - 85 HTI

<u>VS.</u>	<u>PREFERENCE</u>	<u>TASTE</u>
VANTAGE	61/39	55/31
DORAL	59/41	48/34
TRUE	74/26	52/42
KOOL MILD	50/50	49/51
BELAIR	54/46	49/40

1001504774

# VP vs REAL MENTHOL

	<u>MERIT</u>	<u>REAL</u>
MERIT M.S.	29	24
LOW DEL. M.S.	79	60
REG. M.S.	30	28

REAL - HARSHER

MORE SPICY

MORE MENTHOL COOLNESS

MERIT - MORE TASTE TOBACCO LIKE (MERIT)

BETTER AFTER TASTE (LOW DEL.)

ACCEPTABILITY + PURCHASE (LOW DEL.)

1001504775

MERIT MENTHOL 100 - HTI

<u>Vs</u>	<u>PREFERENCE</u>	<u>TASTE</u>
BELAIR 100	61/39 *	53/32 *
KOOL 100	52/48	42/45
B+H 100	46/54	49/41
MERIT 85	47/53	55/26

1001504776

# IMPROVED MERIT MENTHOL - 85

CONTROL  
MERIT

EXP.  
12.502. MENTHOL

TAR	9.8	9.9
NICOTINE	.75	.74 "
P.C.	7.8	7.7
R.T.D.	4.8	4.8
DILUTION	26	26
MENTHOL	.40	.46

VP RESULTS

When?

1001504777



PLANS85mm MERIT13 ~~12~~ 02. MENTHOL - VP OCTOBER100mm MERIT12 ~~12~~ 02.

CIGTS FABRICATED

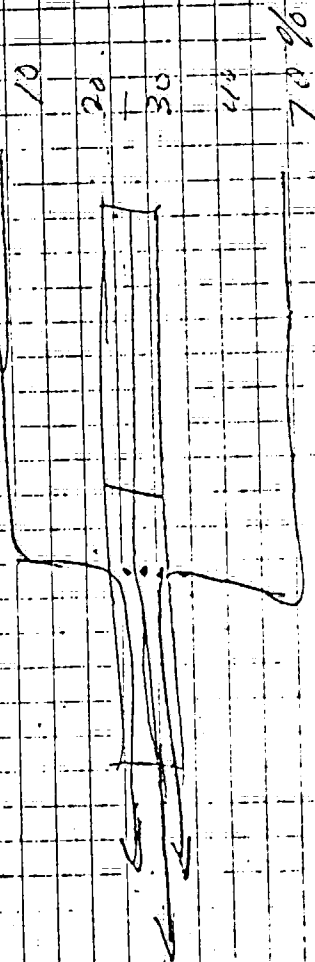
13 ~~12~~ 02.

VP OCTOBER

1001504779

Digital

Dotted

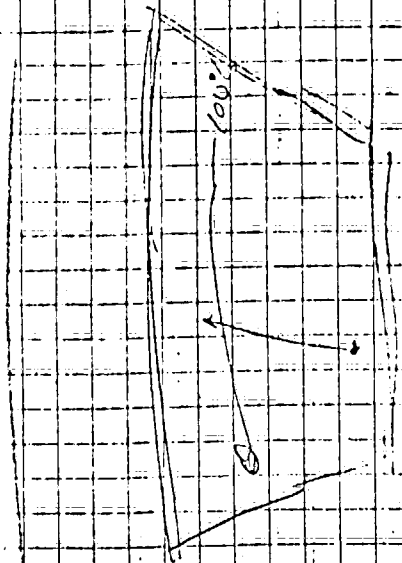


?

DEVICE

1001504780

PROVVIS. THERMISTOR A



HASTINGS FLOWMETER (OBSOLETE)

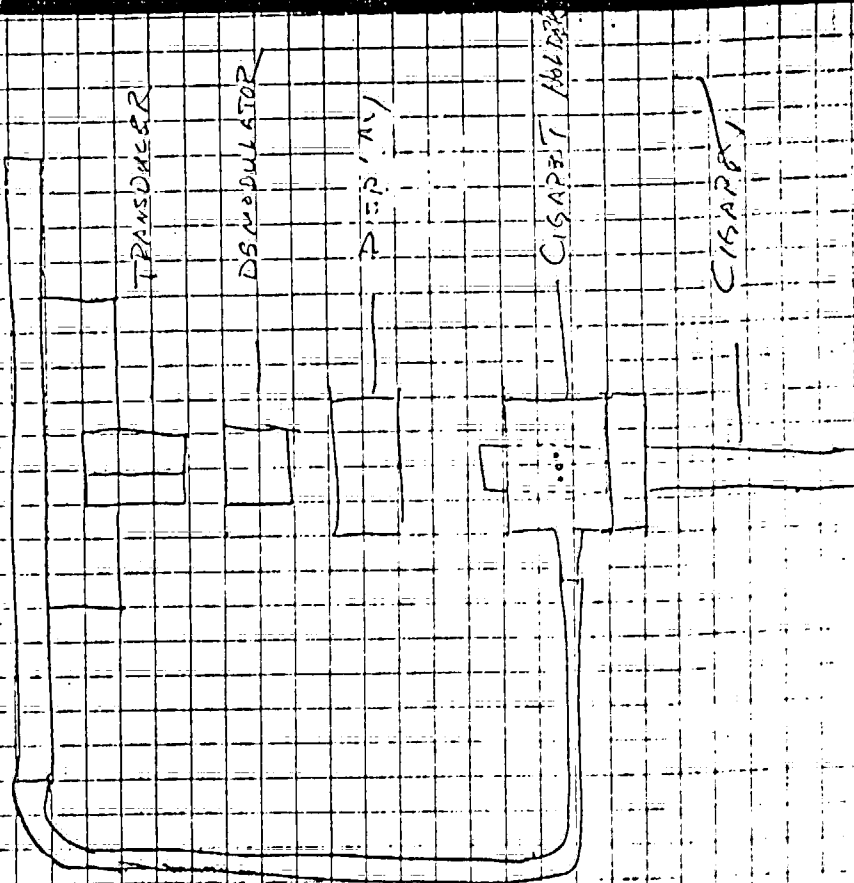
Disadvantages

Slow, Circular Error

# DIGITAL INSTRUMENT

## • SCHEMATIC

MINIATURE PLUG BL

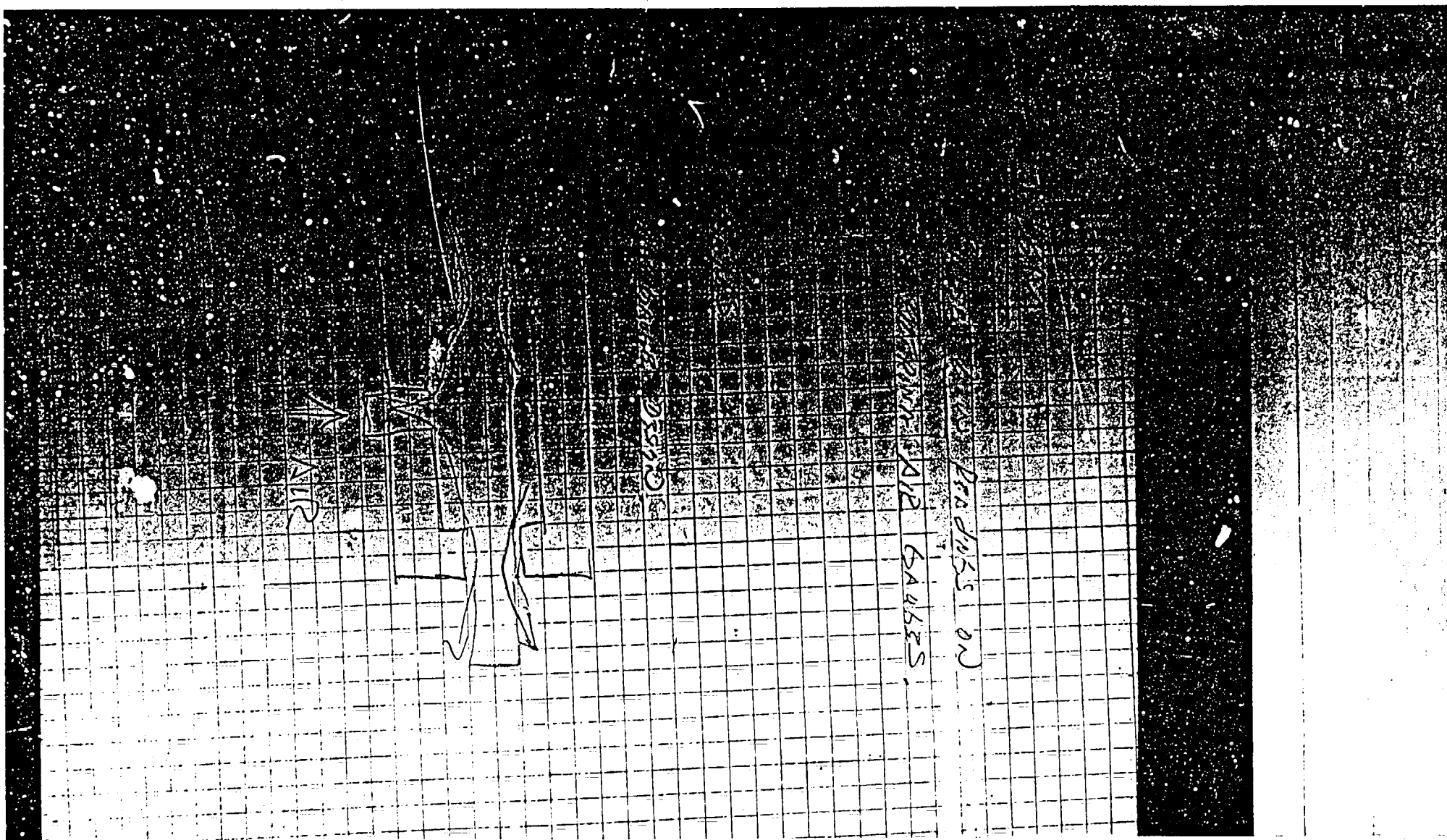


ADVANTAGES

- EASILY CHANGED
- FAST RESPONSE
- NO OPERATOR READING ERRORS
- LINEAR OUTPUT

• STATUS

NEGOTIATIONS LICENSING AGREEMENT  
W. ITR, RICHMOND.



1001504783

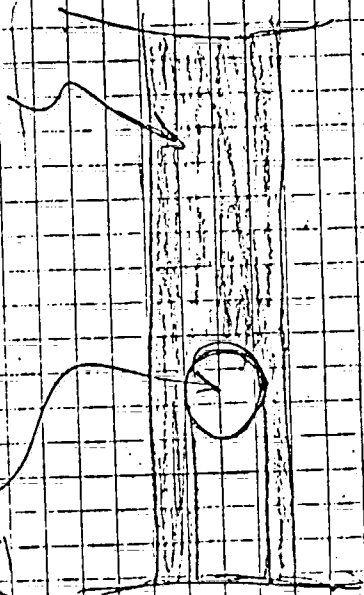
TEST MARKER

OCT 3

GREEN BAY & LITTLE ROCK

SOLUTION

LASER INSTRUMENT



CLAY II from

FILTER BOARDS  
IN BRAM.

APPLICATIONS

- ③ FILTERS IN BOARDS PLUS WAP
- ③ FILTERED PLANTS

1001504784

# DATA

## Mandel standards

		<u>Diameter</u>	<u>LASER READING</u>
		mm	mm
1	1	20.6	20.6
2	2	21.7	21.7
3	3	23.2	23.2
4	4	24.8	24.8
5	5	25.5	25.5

## FILTER PADS

	<u>PLUSNPAP</u>	<u>RTD</u>	<u>AIR GAUGE</u>	<u>LASER</u>
		<u>INCHES</u>	<u>Reading,</u>	<u>Reading,</u>
			mm	mm
1	1. N-P	3.5	24.6	24.6
2	612	"	24.5	24.7
3	410	"	24.6	24.9
4	912	1.2	24.3	25.5
5	712	3.4	24.4	25.0
6	912	6.5	24.4	24.8

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